

APPLICANT(S): YEDGAR, Saul
SERIAL NO.: 09/756,765
FILED: January 10, 2001
Page 30

REMARKS

The present response is intended to be fully responsive to all points of rejection raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of the application is respectfully requested.

Claims 1-90 are pending in the application. Claims 70, 80 and 81 have been amended. Claims 1-69, 71-79 and 82-89 are held withdrawn. New claim 90 has been added in order to further define what the Applicants consider to be the invention. The support for the amended claims 70, 80 and 81 and to the new claim 90 is found in paragraph [0131] and [0135].

Applicants respectfully assert that no new matter has been added.

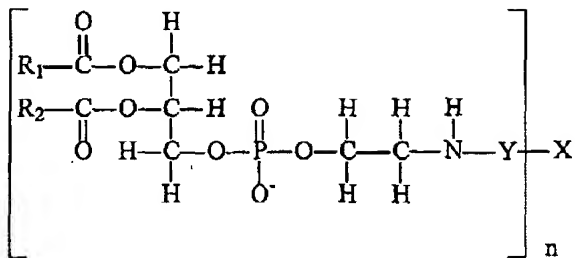
35 U.S.C. § 103 Rejections

In the Office Action, the Examiner rejected claims 70, 80 and 81 under 35 U.S.C. § 103(a), as being unpatentable over the combined teaching of Yedgar et al. and Chaikof et al. in view of Sorgente et al.

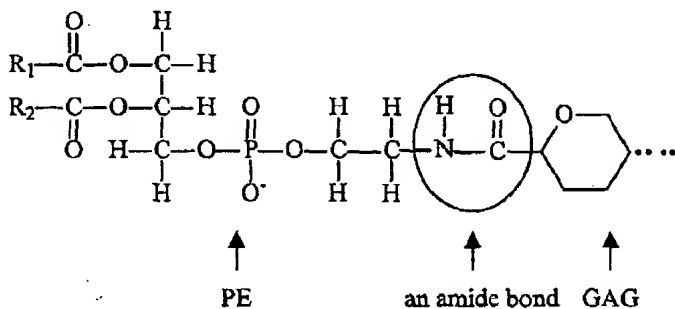
The Examiner asserted that Yedgar et al. discloses examples of amide linkages for example in column 7, II. 35-55. The Examiner further asserted that Chaikof et al. is cited to show the saccharide moiety itself may be therapeutic in similar compounds, further disclosing chondroitin sulfate.

In response, Applicants traverse the Examiner rejection of Claims 70, 80 and 81 under 35 U.S.C. § 103(a) as allegedly being unpatentable over the combined teachings of Yedgar et al. and Chaikof et al. in view of Sorgente et al.

The claimed invention is directed to a phosphatidylethanolamine (PE), represented by the structure in the square brackets, linked by an amide or esteric bond, with or without a spacer Y to an X moiety which is a glycosaminoglycan (GAG):



As described in the claims, in the case wherein Y is nothing, the amide bond is formed between the amine of the PE and the carboxylic acid of the GAG moiety:



In the case wherein Y is —CO—alkylene—NH— two amide bond are formed and in the case wherein Y is —CO—alkylene—CO— one amide bond and one esteric bond are formed.

Yedgar, Chaikof and Sorgente do not disclose either alone or in combination nor render obvious Applicant's invention.

Specifically, Yedgar does not disclose

- 1) a GAG moiety;
- 2) a GAG moiety linked to any chemical moiety via an amide or esteric bond;
- 3) a GAG linked to PE or any other lipid; or
- 4) a GAG linked to PE or any other lipid via an amide or esteric bond.

APPLICANT(S): YEDGAR, Saul
SERIAL NO.: 09/756,765
FILED: January 10, 2001
Page 32

Further, Chaikof does not disclose:

- 1) a GAG moiety linked to any chemical moiety via an amide or esteric bond;
- 2) a PE or any other lipid linked to any chemical moiety via an amide or esteric bond;
- 3) a GAG moiety linked to PE or any other lipid via an amide or esteric bond; or
- 4) any amide or esteric bonding between two chemical moieties.

Further, Sorgente does not disclose:

- 1) any covalent binding of GAG much less an amide or an esteric binding;
- 2) a PE or any other lipid linked to any chemical moiety via an amide or esteric bond
- 3) a GAG linked to PE or any other lipid; or
- 4) a GAG linked to PE or any other lipid via an amide or esteric bond.

Applicant contends that the Examiner has not raised a prima facie case of obviousness because no reference discloses or suggests a GAG linked to PE or any other lipid via an amide or esteric bond or a GAG linked to any chemical moiety via an amide or esteric bond or a PE or any other lipid linked to any chemical moiety via an amide or esteric bond. Moreover, there is no teaching or guidance in any of the references of how to link a GAG to a lipid, much less a PE, via an amide or esteric bond.

In addition, one skilled in the art would have no motivation to obtain Applicant's invention since there is no motivation and/or teaching of using the GAG of Sorgente and linking it to a PE via an amide or esteric bond.

Further, if one would follow the disclosure of Chaikof one would obtain a GAG linked to a PE via an etheric bond and not via an amide or esteric bond. Moreover, the functional biological result would be a non-biodegradable and toxic compound. Therefore, there is no motivation to combine Sorgente with Yedgar and Chaikof to obtain the claimed invention.

APPLICANT(S): YEDGAR, Saul
SERIAL NO.: 09/756,765
FILED: January 10, 2001
Page 33

In addition, applicants unexpectedly found that:

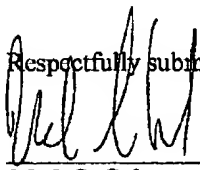
- a. GAG linked to PE via an amide bond (exemplified by chondroitin sulfate - PE conjugate and hyaluronic acid - PE conjugate) have greater (at least one order of magnitude) effect in inhibiting the proliferation of smooth muscle cells as compared to non-GAG moieties linked to PE via an amide bond (exemplified by carboxymethylcellulose - PE conjugate)
- b. GAG linked to PE via an amide bond have greater (at least one order of magnitude) therapeutic effect as compared to GAG linked to PE via a non-amide bond; and
- c. non-conjugated GAGs are at least three times less therapeutic than conjugated (i.e., via an amide or esteric bond) GAGs, (see also Fig. 3).

Therefore, Yedgar et al., Chaikof et al. and Sorgente et al., alone or in combination, do not teach or suggest the invention of claims 70, 80 and 81.

Accordingly, Applicants respectfully request that the rejection of claims 70,80 and 81 under 35 U.S.C. § 103(a) be withdrawn.

No fee is deemed necessary for filing this Amendment. However, if any fee is required, the undersigned Attorney hereby authorizes the United States Patent and Trademark Office to charge Deposit Account 05-0649.

Respectfully submitted,


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